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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/429,626	10/29/1999	CARL EKLUND	730.37246X00	6148

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EXAMINER

TODD, GREGORY G

ART UNIT	PAPER NUMBER
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2157

DATE MAILED: 10/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicant(s)

09/429,626

EKLUND, CARL

Examiner

Gregory G Todd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 1999.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

This is a first office action in response to application filed, with the above serial number, on 29 October 1999 in which claims 1-30 are presented for examination. Claims 1-30 are therefore pending in the application.

Drawings

1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
2. The drawings are objected to because figures 1-3, 5 should be indicated as being prior art. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: On page 16, line 17, "second router 1302" is suggested to be replaced with --first router 1302--.

Appropriate correction is required.

4. Claim 28 is objected to because of the following informalities: "further comprising" in line 1 is suggested to be replaced with --further comprising;--.

Appropriate correction is required.

Claim R jections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-30 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The method or approach as to how a second node address is discovered or presented in relation to a destination address connected to said second node is not disclosed in the disclosure and does not allow the examiner to fully understand how the claims can fully be employed as it is not well-known in the art. Therefore, the claims are rejected as not having enablement from the specification, since the process of knowing a node or router IP address amongst the growing large scope of nodes cannot be easily determined.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite and vague for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The second node address identification method is unclear and vague.

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9. Claims 5, 9, 16, 20, and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Information on a header having unpredictable header information is unclear and indefinite.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi et al (hereinafter "Takagi", 6,272,148) in view of Degermark et al (hereinafter "Degermark", IP Header Compression).

12. As per Claim 1, Takagi discloses a method of initiating compression of an IP header of each packet of a stream of packets to be sent from a source apparatus to a destination apparatus in a packet switched network, the source apparatus being connected to the packet switched network by a first node and the destination apparatus being connected to the packet switched network by a second node wherein Takagi discloses:

- modifying, at the first node, the IP header of a full header packet of the stream of packets so that a destination address field of the IP header contains a second node

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address indicating a location of the second node (at least col. 25, lines 30-38; col. 26, lines 1-10; Fig. 4);..

- transmitting, from the first node to the second node, the full header packet including the modified IP header and the inserted routing header (at least col. 25, lines 30-38; col. 26, lines 1-10; Fig. 4);

- initiating header compression of IP headers of packets of the stream of packets subsequent to the full header packet, when the second node receives the full header packet including the modified IP header and the inserted routing header (at least col. 13, lines 15-26; Fig. 4).

Takagi fails to explicitly disclose inserting or modifying, at the first node, a routing header in the full header packet of the stream of packets, including context identification (CID) information identifying information of the IP header and a destination address indicating a location of the destination apparatus. Takagi does disclose inserting or modifying a link header on a higher layer being encapsulated to include the original destination, which gives motivation to include the new IPv6 standard of including a routing header, specifically, to include CID information on the outermost layer to be examined first in the full header as disclosed in Degermark (at least Degermark pp. 6; pp. 16 - 17). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate and implement a new IP protocol standard with Takagi's header compression because this would let it fit a new standard format of including a specific header for routing purposes so as packets could get routed more efficiently.

13. As per Claims 2 and 13.

- each of the first and second nodes is a router (at least Fig. 11).

14. As per Claims 3, 7, 14, and 18.

- compressing IP header of each of the subsequent packets (subsequent compressed tcp/ip header) when IP header compression has been initiated (at least Fig. 5).

15. As per Claims 4, 8, 15, and 19.

- transmitting the subsequent packets including the CID information (link header) without an IP header (at least Fig. 4, 5).

16. As per Claims 5, 9, 16, and 20.

- transmitting each of the subsequent packets including the CID information (link header) with a compressed IP header which includes unpredictable IP header information (at least Fig. 5).

17. As per Claims 6 and 17.

Takagi does not explicitly disclose storing information of the IP header of the full header packet as a context in corresponding relation to the CID information. However, the use and advantages for storing the IP header of the full header packet is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Degermark. Degermark discloses sending a full header packet and a non-TCP CID being associated with a context respective to a non-TCP header (at least Degermark pp. 7, 8, 23). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of Degermark's

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storing the IP information in relation to a specific context and CID because this would allow the original information stored in the IP header to be decompressed and utilized at the end-point, otherwise the original IP information including the destination address would not be known and used for the packet to reach its final destination.

18. As per Claims 10, 11, 21, and 22.

Takagi does not explicitly disclose decompressing each of the subsequent packets by using the CID information included in the subsequent packet to refer to the stored context. However, the use and advantages for decompressing is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Degermark. Degermark discloses decompressing a header based on the last version of the header received (at least Degermark pp. 6). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of Degermark's decompression so that the last incoming compressed header can be properly decompressed according to the latest context as the latest context could represent something having changed on the first node and therefore the packet can be decompressed accordingly and correctly.

19. As per Claim 23, Takagi discloses a router for use in a packet switched network for initiating compression of an Internet Protocol (IP) header of each packet of a stream of packets to be sent from a source apparatus to a destination apparatus in the packet switched network, the source apparatus being connected to the packet switched

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network by the router and the destination apparatus being connected to the packet switched network by another router wherein Takagi discloses:

- first apparatus which modifies the IP header of a full header packet of the stream of packets so that a destination address field of the IP header contains an address indicating a location of the another router (at least col. 25, lines 30-38; col. 26, lines 1-10; Fig. 4);

- third apparatus which transmits to the another router the full header packet including the modified IP header and the inserted routing header to initiate header compression of the IP header of each packet of the stream of packets subsequent to the full header packet upon receipt in the another router of the full header packet including the modified IP header and the inserted routing header (at least col. 25, lines 30-38; col. 26, lines 1-10; col 13, lines 15-26; Fig. 4).

Takagi fails to explicitly disclose a second apparatus which inserts a routing header in the full header packet of the stream of packets, the routing header having context identification (CID) information identifying information of the IP header in a destination address indicating a location of the destination apparatus. Takagi does disclose inserting or modifying a link header on a higher layer being encapsulated to include the original destination, which gives motivation to include the new IPv6 standard of including a routing header, specifically, to include CID information on the outermost layer to be examined first in the full header as disclosed in Degermark (at least Degermark pp. 6; pp. 16 - 17). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate and implement a new IP

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protocol standard with Takagi's header compression because this would let it fit a new standard format of including a specific header for routing purposes so as packets could get routed more efficiently.

20. As per Claim 24.

- fourth apparatus which compresses the IP header of each of the subsequent packets (subsequent compressed tcp/ip header) when IP header compression has been initiated (at least Fig. 5).

21. As per Claim 25.

- fifth apparatus which transmits the subsequent packets including the CID information (link header) without an IP header (at least Fig. 4, 5).

22. As per Claim 26.

- sixth apparatus which transmits each of the subsequent packets including the CID information (link header) with a compressed header which includes unpredictable IP header information (at least Fig. 5).

23. As per Claim 27.

Takagi does not explicitly disclose a seventh apparatus which stores information of the IP header of the full header packet as a context in corresponding relation to the CID information. However, the use and advantages for storing the IP header of the full header packet is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Degemark. Degemark discloses sending a full header packet and a non-TCP CID being associated with a context respective to a non-TCP header (at least Degemark pp. 7, 8, 23). Therefore, it would have been obvious to

one of ordinary skill in the art at the time the invention was made to incorporate the use of Degermark's storing the IP information in relation to a specific context and CID because this would allow the original information stored in the IP header to be decompressed and utilized at the end-point, otherwise the original IP information including the destination address would not be known and used for the packet to reach it's final destination.

24. As per Claim 28.

- eighth apparatus which compresses the IP headers of each of the subsequent packets (subsequent compressed tcp/ip header) when the IP header compression has been initiated (at least Fig. 5).

25. As per Claim 29.

Takagi does not explicitly disclose a ninth apparatus which stores information of the IP header of the full header packet in corresponding relation to the CID information in response to receipt of the full header packet including the modified IP header and the inserted router header from the another router. However, the use and advantages for storing the IP header of the full header packet is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Degermark. Degermark discloses sending a full header packet and a non-TCP CID being associated with a context respective to a non-TCP header to initiate compression upon receipt of a full header packet containing a CID (at least Degermark pp. 7, 8, 23). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of Degermark's storing the IP information in relation to a

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specific context and CID and initiating compression on receipt of a full header CID because this would allow the compression to begin by being notified from a full header, since the second node would not have a CID to decompress the packet with if a first full packet containing the CID were not sent first.

26. As per Claim 30.

Takagi does not explicitly disclose a tenth apparatus which decompresses packets subsequent to the full header packet according to the stored CID information. However, the use and advantages for decompressing is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Degermark. Degermark discloses decompressing a header based on the last version of the header received (at least Degermark pp. 6). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of Degermark's decompression so that the last incoming compressed header can be properly decompressed according to the latest context as the latest context could represent something having changed on the first node and therefore the packet can be decompressed accordingly and correctly.

Conclusion

27. Bestavros et al, Cisneros et al, Walker, Kumar et al, Taglione et al, Brendel et al, Slane, and Callon along with Deering et al, Balakrishnan et al and Degermark et al are cited for disclosing pertinent information related to the claimed invention. Applicants are

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requested to consider the prior art reference for relevant teachings when responding to this office action.


28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory G Todd whose telephone number is (703)305-5343. The examiner can normally be reached on Monday - Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (703)308-7562. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-9153 for regular communications and (703)305-7201 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.



gt
October 11, 2002



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